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PETITION

Mail Stop Patent Application
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Your Petitioners, Terry Swanson and Larry Swanson, citizens of the United States of America and residents of the State of Nebraska, whose residence and mailing address for Terry Swanson is 2357 Warren Drive, Plattsmouth, Nebraska 68048 and for Larry Swanson is 2357 Warren Drive, Plattsmouth, Nebraska 68048, pray that Letters Patent Protection be granted to them for an

IMPROVED PLASTIC BASKET SHOPPING CART

as set forth in the following specification:

Background of the Invention

1. Technical Field

The present invention relates to shopping cart improvements and, more particularly, to a shopping cart having a plastic basket in which the plastic basket is a generally rectangular box having a base wall, left and right side walls and a front wall connecting the left and right side walls with the left and right side walls and front wall having a plurality of generally rectangular wall openings generally having a height greater than their width excepting at least some of the wall openings on the side walls and front wall adjacent the base wall being generally square in shape with approximately equal heights and widths, the left and right side walls also including rear flange sections which extend outwards and rearwards therefrom to at least partially cover an adjacent portion of the rear frame section of the shopping cart and finally the improved shopping cart would include a basket rim

1 support wire extending circumferentially around and passing through
2 upper portions of the left and right side walls and front wall,
3 with the ends of the basket rim support wire connected to the rear
4 frame section to increase the structural strength of the plastic
5 basket as mounted on the rear frame section and cart frame.

6 7 **2. Description of the Prior Art**

8 Various types of molded plastic baskets and rear panels for
9 shopping carts have been described in various prior art patents,
10 for example, Badger, U.S. Patent No. 4,632,411, Kern et al., U.S.
11 Patent No. 5,947,313 and Rehrig, U.S. Patent Nos. 4,273,346 and
12 4,650,199. Each of these molded plastic baskets include various
13 features which, at the time of patenting, were considered advanced
14 in the field of plastic basket shopping cart design. However, the
15 prior art still does not solve two of the major problems
16 encountered in plastic basket design, and these are the structural
17 integrity of the molded plastic basket and the connection of the
18 molded plastic basket to the metal shopping cart frame on which it
19 is mounted. There is therefore a need for an improved plastic
20 basket shopping cart which addresses and generally solves these two
21 prior art deficiencies.

22 Due to the loading and use characteristics of shopping cart
23 baskets, the majority of stresses encountered by the plastic basket
24 are encountered where the base wall of the basket connects with the
25 side and front walls of the basket. The cited prior art baskets do
26 not address the need for improved structural strength at these
27 critical basket junctions, instead using the same grid or criss-
28 cross formation all the way down to the base wall along the side

1 and front walls. As the vast majority of flexing of the plastic
2 basket walls takes place at the connection between the side walls
3 and base wall and the front wall and base wall, it is critical that
4 the location of the connections be structurally superior to other
5 less critical areas of the plastic basket. There is therefore a
6 need for an improved structural construction of the plastic basket
7 to provide reinforcement of the connection between the side walls
8 and base wall and front wall and base wall while still permitting
9 the plastic basket to be molded as a single piece to keep the
10 construction cost of the plastic basket as low as possible.

11 One of the other problems encountered with the plastic baskets
12 of the prior art is that the connection of the plastic basket to
13 the metal frame often leaves small gaps and spaces between the
14 metal frame on which the basket is mounted and the basket itself.
15 While in the majority of situations this does not present a
16 problem, there are occasional times when items will fall from the
17 basket or, more seriously, children's fingers or other extremities
18 may become stuck between the basket and frame, and it is clear that
19 either situation is undesirable. There is therefore a need for a
20 basket construction which will generally eliminate the gaps between
21 the plastic basket and the metal frame, particularly along the rear
22 edges of the side walls and base wall to generally eliminate the
23 loss of items stored within the cart and/or the catching of
24 extremities in the gaps, particularly, the extremities of children.

25 Therefore an object of the present invention is to provide an
26 improved plastic basket shopping cart.

27 Another object of the present invention is to provide an
28 improved plastic basket shopping cart which includes a cart base

1 having an upwardly extending rear frame section, at least three
2 wheels rotatably mounted on the cart base, and a generally
3 rectangular box shaped plastic basket mounted on the cart base, the
4 plastic basket including a base wall, left and right side walls
5 mounted on and extending upwards from the base wall and a front
6 wall mounted on and extending upwards from the base wall and
7 extending between and connecting forward portions of the left and
8 right side walls.

9 Another object of the present invention is to provide an
10 improved plastic basket shopping cart in which the left and right
11 side walls and front wall include a plurality of generally
12 rectangular wall openings extending through the walls, the wall
13 openings generally having a height greater than their width,
14 excepting the wall openings adjacent to the base wall which are
15 generally square in shape with approximately equal heights and
16 widths for improved structural strength of the connection between
17 the left and right side walls and front wall and base wall.

18 Another object of the present invention is to provide and
19 improved plastic basket shopping cart in which the left and right
20 side walls each include generally cross-sectionally arcuate rear
21 flange sections which extend outwards and rearwards therefrom, the
22 rear flange sections at least partially covering an adjacent
23 portion of the rear frame section to substantially prevent items in
24 the plastic basket from falling out of the plastic basket through
25 the gaps between the left and right side walls and the rear frame
26 section.

27 Another object of the present invention is to provide an
28 improved plastic basket shopping cart in which a basket rim support

1 wire extends circumferentially around and passes through upper
2 portions of the left and right side walls and front wall, the ends
3 of the basket rim support wire connected to and mounted on the rear
4 frame section adjacent an upper portion thereof for increased
5 shopping cart structural strength and improved mounting of the
6 plastic basket on the rear frame section.

7 Finally, an object of the present invention is to provide an
8 improved plastic basket shopping cart which is relatively simple
9 and inexpensive to manufacture and is safe, efficient and durable
10 in use.

Summary of the Invention

The present invention provides an improved plastic basket shopping cart including a cart base having an upwardly extending rear frame section having a handle mounted thereon and at least three wheels rotatably mounted on the cart base. A generally rectangular box-shaped plastic basket is mounted on the cart base, the plastic basket including a base wall, left and right side walls mounted on and extending upwards from the base wall and a front wall mounted on and extending upwards from the base wall and extending between and connecting forward portions of the left and right side walls. A rear wall is mounted on the rear frame section of the cart base for enclosing the interior of the basket. Each of the left and right side walls and the front wall include a plurality of generally rectangular wall openings extending through the left and right side walls and the front wall, the wall openings generally having a height greater than their width, except for at least some of the wall openings on the left and right side walls and the front wall which are adjacent the base wall which are generally square in shape with approximately equal heights and widths for improved structural strength. Each of the left and right side walls further include rear flange sections which extend outwards and rearwards therefrom, the rear flange sections each at least partially covering an adjacent portion of the rear frame section to substantially prevent items in the plastic basket from falling out of the plastic basket through a gap between the left and right side walls and the rear frame section. Finally, a basket rim support wire extends circumferentially around and through upper portions of the left and right side walls and the front wall, the

1 ends of the basket rim support wire connected to and mounted on the
2 rear frame section adjacent an upper portion thereof for increasing
3 the structural strength of the plastic basket on the rear frame
4 section.

5 The improved plastic basket shopping cart of the present
6 invention as thus described provides many advantages of those
7 devices found in the prior art. For example, because the
8 connections between the left and right side walls and base wall and
9 front wall and base wall are significantly strengthened, the
10 useable life span of the shopping cart is extended and therefore
11 the operating costs for the shopping cart are decreased as compared
12 to those devices found in the prior art. Also, because the
13 connection of the plastic basket to the metal frame significantly
14 reduces and in many cases eliminates gaps between the metal frame
15 and rear of the plastic basket, the loss of items from the cart
16 interior is generally prevented and, possibly even more
17 importantly, the opportunity for children to catch their
18 extremities in the gaps of the shopping cart is greatly reduced.
19 Furthermore, because the basket rim support wire extends
20 circumferentially around and passes through upper portions of the
21 left and right side walls and front wall, the structural strength
22 of the entire shopping cart is increased, as the connection between
23 the plastic basket and metal frame is greatly strengthened.
24 Finally, because all these improvements are made without
25 significantly modifying the construction methods used in connection
26 with the plastic basket (i.e. injection molding), the improvements
27 thus described are incorporated without significantly increasing
28 the construction costs of the plastic basket of the present

1 invention. The plastic basket shopping cart of the present
2 invention thus provides a substantial improvement over those
3 devices found in the prior art.

1 **Brief Description of the Drawings**

2 Figure 1 is a perspective view of the improved plastic basket
3 shopping cart of the present invention;

4 Figure 2 is a side elevational view of the improved plastic
5 basket shopping cart of the present invention;

6 Figure 3 is a top plan view of the present invention;

7 Figure 4 is a front elevational view of the present invention;

8 and

9 Figure 5 is a detail perspective view of the rear flange of
10 one side wall of the present invention.

Description of the Preferred Embodiment

The improved plastic basket shopping cart **10** of the present invention is shown best in Figures **1-4** as including a metal cart frame **12** on which is mounted the improved plastic basket **50**. It should be noted that the cart frame **12** of the present invention is generally similar to various types of frames constructed for shopping carts, and would include a generally trapezoidal base frame **14** on which are mounted a plurality of wheels **16a, 16b, 16c** and **16d**. Extending upwards from the base frame **14** is a center basket support strut **18** which is generally inverted U-shaped, and a rear frame section **20** which extends upwards from the base frame **14** and at the upper most portion thereof includes a cart handle portion **22**, as shown best in Figures **1** and **2**. In the preferred embodiment, cart base **14**, center basket support strut **18** and rear frame section **20** would all be constructed of tubular metal bars constructed of steel or aluminum and it should be further noted that the exact size, shape and construction materials used in connection with the cart frame **12** are not critical to the present invention so long as the cart frame **12** properly supports the plastic basket **50** thereon. It is also expected that the improved plastic basket shopping cart **10** will include a rear wall **24** pivotably mounted on the rear frame section and a child seat/rear basket **26** mounted on the rear wall **24**, substantially similar to those commonly found in conventional shopping carts, although it is not critical to include the child seat/rear basket **26** should such a modification be desired.

The plastic basket **50** of the present invention is shown best in Figures **1-4** as including a base wall **52**, left and right side

1 walls **54a** and **54b** and front wall **56**, the entire plastic basket **50**
2 being constructed via an injection molding process which produces
3 a single molded plastic unit. It is preferred that each of the
4 side walls **54a** and **54b** and front wall **56** be constructed as
5 including a plurality of intersecting generally horizontal and
6 generally vertical ribs **58** and **60** which are formed during the
7 injection molding process and which therefore leave a plurality of
8 wall openings **62**, as shown best in Figures **1** and **2**. In the
9 preferred embodiment, each of the wall openings **62** starting from
10 the top of each of the side walls **54a** and **54b** and front wall **56**
11 would be generally rectangular in shape having a height greater
12 than the width of the wall opening **62**, excepting some of the
13 topmost wall openings which are trapezoidal in shape due to the
14 upwardly sloping angle of the top edges **66a** and **66b** of the side
15 walls **54a** and **54b**. It has been found that the generally
16 rectangular shape of wall opening **62** permits sufficient structural
17 strength of the side walls **54a** and **54b** and front wall **56** while also
18 conserving construction material, namely the plastic construction
19 material used in connection with the plastic basket **50**, thus
20 keeping the cost of construction down while simultaneously
21 providing sufficient structural strength for the plastic basket **50**.
22 However, it has also been found that the generally rectangular
23 shape of the wall opening **62** should be modified adjacent the
24 connection of side walls **54a** and **54b** to base wall **52** and front wall
25 **56** to base wall **52**, and therefore it is an important feature of the
26 present invention that the wall openings **64** adjacent the base wall
27 **52** in side walls **54a** and **54b** and front wall **56** be generally square
28 in shape having approximately equal height and width, thereby

1 increasing the structural strength and flexibility of the improved
2 plastic basket of the present invention. The modification of the
3 shape of the lowermost wall openings **64** is a unique aspect of the
4 present invention and it has been found that the use of the
5 differently dimensioned wall openings **64** has a significant impact
6 on the structural strength of the plastic basket **50** itself.

7 The base wall **52** may further include a reinforced plate
8 section **74** which provides additional support for the mounting of
9 the center basket support strut **18** and therefore strengthens the
10 entire shopping cart structure. This reinforced plate section **74**
11 would preferably be formed during the manufacturing process and may
12 be of many different sizes and shapes so long as the reinforced
13 plate section **74** performs its intended function of providing
14 additional support for the mounting of the center basket support
15 strut **18**.

16 Another important feature of the present invention is shown
17 best in Figures **1**, **2**, **4** and **5** and is specifically found on the rear
18 edges **68a** and **68b** of sidewalls **54a** and **54b**. Specifically, mounted
19 on and extending outwards and rearwards from rear edges **68a** and **68b**
20 of side walls **54a** and **54b** are a pair of rear frame section engaging
21 flanges **70a** and **70b** which are generally semi-cylindrical in shape,
22 having an arcuate cross-sectional shape, and extend rearwards over
23 and around the rear frame section **20**, specifically the upwardly
24 extending portions of rear frame section **20** shown best in Figures
25 **1** and **2**. As shown in the drawings, flanges **70a** and **70b** extend from
26 the base wall **52** upwards to adjacent top edge **66a** and **66b** of side
27 walls **54a** and **54b** to generally close the gap between rear edges **68a**
28 and **68b** of sidewalls **54a** and **54b** and rear frame section **20**, a gap

1 which is responsible not only for the loss of smaller materials
2 therethrough but also is responsible in those devices found in the
3 prior art for catching the extremities of small children therein
4 which can potentially cause injury to the child, a highly
5 undesirable feature of the prior art.

6 It should be noted that the curvature of flanges **70a** and **70b**
7 around rear frame section **20** is significant for an additional
8 reason in that the rear frame extensions found in some devices in
9 the prior art are liable to be broken off through incidental
10 contact of the rearwardly projecting flange with external elements,
11 but the curvature of the flanges **70a** and **70b** of the present
12 invention remove the rearward edge **72a** and **72b** of flanges **70a** and
13 **70b** from the area most likely to be impacted by external elements,
14 namely the left and right outer faces of the rear frame section **20**.
15 This then makes it unlikely that the flanges **70a** and **70b** would be
16 broken off because of their curvature, as opposed to the various
17 rearwardly projecting basket extensions of shopping carts in the
18 prior art. This flange curvature is an important and unique
19 element of the present invention.

20 Another important element of the present invention is that the
21 plastic basket **50** is mounted to the cart frame **12** at three
22 locations, specifically by a pair of L-shaped brackets **30a** and **30b**
23 which connect the plastic basket **50** to the center basket support
24 structure **18**, the connection of the rear edges **68a** and **68b** of side
25 walls **54a** and **54b** which are preferably riveted to rear frame
26 section **20** generally adjacent the base wall **52** and finally and
27 perhaps most importantly, a basket rim support wire **80** which
28 extends circumferentially around and passes through upper portions

1 of side walls **54a** and **54b** and front wall **56** as shown best in
2 Figures **1** and **2**, the basket rim support wire **80** then being
3 connected at the ends thereof to the rear frame section **20** to
4 securely and safely mount the plastic basket **50** on the cart frame
5 **12**. The basket rim support wire **80** is preferably a metal wire or
6 tube which extends adjacent the top edges **66a** and **66b** of side walls
7 **54a** and **54b** and the top edge **57** of front wall **56** and would be
8 housed within a channel **82** which extends circumferentially around
9 the upper portion of plastic basket **50** on side walls **54a** and **54b**
10 and front wall **56**. The channel **82** would preferably be formed
11 integrally with the side walls **54a** and **54b** and front wall **56** in
12 order to provide additional structural stability to the plastic
13 basket **50** and once the basket rim support wire **80** is extended
14 through channel **82** and connected to rear frame section **20** via
15 appropriate fastening devices, the plastic basket **50** is securely
16 and safely mounted on the cart base frame **12** to form the plastic
17 basket shopping cart **10** of the present invention.

18 It is to be understood that numerous additions, modifications,
19 and substitutions may be made to the improved plastic basket
20 shopping cart **10** of the present invention which fall within the
21 intended broad scope of the appended claims. For example, the
22 precise size, shape and construction materials used in connection
23 with the present invention are generally not critical to the
24 present invention, excepting that the plastic basket **50** should be
25 constructed of a molded plastic material in order to take full
26 advantage of the durability properties of that construction
27 material. Also, the exact size and shape and number of wall
28 openings **62** and square wall openings **64** is not critical to the

1 present invention so long as the square wall openings **64** are formed
2 adjacent base wall **52** in side walls **54a** and **54b** and front wall **56**
3 to increase the structural stability of the plastic basket **50**.
4 Finally, the exact nature of the flanges **70a** and **70b** and basket rim
5 support wire **80** may be modified or changed so long as the intended
6 functional characteristics of the flanges **70a** and **70b** and basket
7 rim support wire **80** are maintained, specifically that the flanges
8 **70a** and **70b** curve at least partially around the rear frame section
9 **20** and the basket rim support wire **80** supports and strengthens the
10 connection of the plastic basket **50** to the rear frame section **20**
11 and provides additional structural strength for the plastic basket
12 **50** itself.

13 There has therefore been shown and described an improved
14 plastic basket shopping cart **10** which accomplishes at least all of
15 its intended objectives.